HUNTERS POINT NAVAL SHIPYARD, COMMERCIAL DRYDOCK AREA, BUILDING 140
East of the intersection of Robinson Avenue & Fischer Drive
San Francisco
San Francisco County
California

HAER NO. CA-2273-A

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
San Francisco, California 97104

HISTORIC AMERICAN ENGINEERING RECORD

Hunters Point Naval Shipyard, Commercial Drydock Area, Building 140

HAER No. CA-2273-A

Location: Hunters Point Naval Shipyard, San Francisco, California
USGS Quadrangle Hunters Point, 1993
UTM Coordinates for Building 140 = 10 mE/556333 mN/4175985

Significance:

Building 140, the pump house for Drydock 3, is located within the Hunters Point Naval Shipyard, Commercial Drydock Area. This historic area is significant at the state level for its important association with the development of commercial shipping and ship-repair in the San Francisco Bay area. The historic area is also a significant example of marine engineering, the work of master engineer, Howard C. Holmes, and a significant example of Neoclassical Revival architecture used for industrial buildings. Building 140, engineered by Holmes and designed in the Neoclassical Revival style, contributes to the significance of the historic area.

Description:

Building 140 (Pump House No. 3) sits north of Drydock 3, midway between the east and west ends of the drydock. Constructed in 1916-18 of brick laid in a running bond pattern, the building measures 88' by 48' and has an irregular footprint with a western squared end and an eastern end forming an apse (**Photograph 3**). Built in the Neoclassical Revival style, it has an eclectic mix of Colonial and Greek revival elements. This building sits on a concrete foundation. The slate-tile roof forms a gable over most of the building except at the west end where it forms a partial conical roof above the apse. The north, west, and south sides consists of thirteen half-round brick arches separated by brick pilasters below a corbelled architrave (**Photograph** 7). Two sixteen-over-sixteen double-hung wood windows with a thirty-light fixed transom above fill all of these arches, with the exception of one on the south side that once included large wood-panel double doors. Those doors have been removed and currently the opening is covered by plywood. Like Building 205, the main symmetrical façade (west side) is dominated by a pedimented gable end decorated with a boxed and modillioned cornice with plain frieze. Just below are three half-round brick arches set between brick pilasters. The gable end is clad with slate shingles and includes an arched louver vent flanked by fixed wood panels imitating a Palladian window. Two sixteen-over-sixteen double-hung wood windows set below a thirty-light wood fixed transom window are found within the outer arches. The original wood-paneled double doors have been removed and currently the opening is covered with plywood. Copper rain gutters and downspouts attached to the exterior with ornamental brackets are found at six locations around the building; some are intact, others have only fragments of the spouts remaining. Light fixtures that once flanked either side of each entrance have been removed.

Building 140 was constructed as a pump house for Drydock 3, and it houses the motors and control panels that once operated the pumps deep in the pump pit. Presently the pump pit is inundated. In general, interior walls are clad in cement plaster with white subway tile on the lower portions of the walls. Flooring consists of white hexagonal tile with a perimeter border of

black tile that form a Greek key pattern. The interior plan is generally divided into two main rooms: a circular room on the east end, and a square room with convex east wall (**Photograph 25**). Additionally, two small anterooms on the south and north sides encompass the triangular spaces formed by the junction of the two main rooms. The eastern room is circular and formed by the curved portion of the apse end and a curved partition wall on the west side. Wood-paneled doors lead from this room into the anterooms. The focal point of the room is a central cast-iron column clad in subway tiles and cement plaster which extends downward to the base of the pump pit. Four large circular motors and two smaller circular motors surround the center column, each powering a centrifugal pump beneath ground level. The back (west) wall has a cast iron panel with a series of motor controls and gauges measuring kilowatt hours (**Photograph 12**). The central column extends upward to a crown that anchors the arm of a revolving crane. When operational, the revolving crane would rotate around the axis formed by the column. A box-shaped metal bus designed to be moved back and forth along the arm remains, and a large hook, rigged with a pulley, hangs from the arm (**Photograph 14**). Just east of the entrance door are the remains of a rectangular circuit box. A complex truss system radiates from the central column in the apse end and supports a 4" cinder concrete roof, reinforced with welded metallic fabric and clad with slate shingles.

The anteroom on the north side of the building includes a staircase leading to the pump pit, and provides access above the crane in the east room and pulley track in the east room by metal ladders. It also houses the restroom (southwest corner) which has a single marble stall. A cast-iron panel, three sections high by five sections wide with remnants of meters, is affixed about 2' in front of the north wall. The anteroom on the south side is a mirror image of the north anteroom, but only includes staircase leading to the pump pit. Unlike the north anteroom, this room has a drop ceiling that bisects the exterior window. Wood-paneled doors lead from either anteroom to the western end of the building. This large room has convex east wall that contains the back side of the motor control panel in the east room. A wide band of crown molding located approximately 1' above the windows wraps around the entire room, creating the illusion of low walls. The west wall is highlighted by the arched opening of the exterior louver, now filled with plywood. The central portion of this room consists of transformers, switchgear, and workbenches.

History:

For a detailed history of Hunters Point Naval Shipyard, Commercial Drydock Area, please refer to **HAER No. CA-2273**.

The San Francisco Dry Dock Company, successor of California Dry Dock Company, owned and operated the original Drydock 1 at Hunters Point at the turn of the twentieth century. Since construction of that original drydock at Hunters Point in 1868, ships had increased in size. In order to accommodate the larger commercial ships, San Francisco Dry Dock Company commissioned highly esteemed civil engineer Howard C. Holmes to design a new, larger drydock. City Street Improvement Company finished construction of the new drydock, Drydock 2, in 1903. In 1905, Charles Schwab, on behalf of Bethlehem Steel, purchased Union Iron Works Shipbuilding plant, and in 1908 purchased the Hunters Point drydocks from San Francisco Drydock company, consolidating the two operations under the Union Iron Works

name. Schwab immediately began planning for the construction of a new, larger drydock at the site. After negotiations with the Navy and considering alternate locations for the new drydock, Union Iron Works accepted specifications for Drydock 3 and Building 140 submitted by Holmes in 1916. [1]

The specifications Holmes submitted in March 1916 outlined and divided into six separate parts the construction plans of the drydock, and the associated pumping plant, electric equipment, approaches, wharves, caisson, and other appurtenances. Union Iron Works awarded each part as a separate contract. They awarded the first and largest part which included excavation, concrete work, the power and transformer building, pump pit, and discharge and suction tunnels to San Francisco Bridge Company in May 1916.[2]

Although Holmes specified that the pumping plant (Building 140) designed to drain Drydock 3, should aesthetically and architecturally complement the existing pumping plant (Building 205), the new plant had fundamental technological differences from the old. Constructed within less than twenty years of one another, the two pumping plants reflect technological advances made in the early twentieth century. While the older pumping plant had engines operated by steam boilers and a compressor, the new pumping plant was entirely electric.

A reinforced concrete tunnel of 12' inside diameter, extending north from the drydock to directly beneath the pump pit, connected Drydock 3 to the pumping plant. Six squirrel cage, induction type motors placed in a circular room powered six centrifugal pumps in a circular pump pit below. Four main 54" diameter pumps, operated by 750 horse power motors, and two smaller, 15" diameter discharge pumps operated by two smaller motors, were designed to drain the drydock in two hours and fifteen minutes. Each pump, manufactured by Byron-Jackson Iron Works of San Francisco, was mounted on a rotating shaft operated by the motors above. Beneath the main pumps, 54" diameter suction pipes, 2' above the floor of the intake pipe, drew water in and the cast iron impellers caused the water to exit the pump through 48" diameter discharge cast iron pipes (**Photograph 21**). The two smaller pumps each had 15" diameter suction pipes extending to the bottom of the intake channel, and also connected to sump pumps in the pump room floor. The two discharge pipes from the smaller pumps merged near the center of the pump pit and water was discharged through a 20" diameter discharge pipe. Each of the five discharge pipes had check valves to prevent backflow. The main discharge pipes had connections with both high pressure salt water and Spring Valley Water mains for the purpose of

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[1] "Four Wharves to Cost Nearly Half a Million," *San Francisco Call,* October 11, 1900, 12; "Ready to Begin the Construction of a Drydock of Gigantic Size," *San Francisco Call*, November 18, 1900, 23; "Chief Engineer Holmes Resigns His Position," *San Francisco Chronicle,* February 21, 1901, 12; Howard C. Holmes, *Plan Showing Location of Old and New Dry Docks at Hunters Point San Francisco Cal, Property of San Francisco Dry Dock Co*, 1903, Water Resources Center Archives, Berkeley, Charles Derleth Papers, Box 18, Folder 96; "Hunters Point Drydock Merged with Union Iron Works," *San Francisco Call,* November 12, 1908, 1-2; "History of Bethlehem's San Francisco Yard, 1849-1949," *Pacific Marine Review* (October 1949), 27; "New Dry Dock for San Francisco," *Journal of the Society of Naval Engineers* XXVII (1915), 235-240; "Dry Dock is to be Built by S.F. Firm," *San Francisco Chronicle,* May 2, 1916, 1.

[2] Howard C. Holmes, *Specifications for a Concrete Graving Dock for the Union Iron Works, Hunters Point, San Francisco,* 1916, M.M. O'Shaughnessy Papers, Subseries 1.3, Carton 10, Folder 22, Bancroft Library, 1-2; "Work is Begun on Monster Dry Dock at Hunter's Point," *San Francisco Chronicle*, February 20, 1916, 29.

priming drainage pumps.[3] Specifications indicate the sumps were connected "with tunnel," likely the 20" discharge pipe associated with the smaller pumps. An estimate for replacement of the sump pumps, prepared in 1959, refers to the two 15" pumps as sump drainage pumps and indicates that they needed replacement, along with four suction line gage valves from Drydock 3 pump well after forty-two years of continuous use. New pumps, gate valves, and necessary piping would be installed to replace the old system that had become significantly corroded.[4]

Holmes designed the pump and transformer building for Drydock 3, Building 140, to complement the existing power house for Drydock 2 in design, materials, and ornamentation. Specifications stated "all brick cornices, belt courses, arches and other ornamental brick work … must be laid up in the most neat and substantial manner and must follow the detail of the present power house." Holmes repeatedly made clear in the specifications that the work associated with the building was to be of superior quality and workmanship.[5]

In addition to quality and workmanship, the specifications also called for very sturdy construction of the new building. Exterior walls were veneered with the best Sacramento stock brick laid in red mortar over one-foot-thick, likely reinforced concrete, walls. Although specifications do not state if the concrete was reinforced, the building period, the fact that construction occurred after the 1906 earthquake, and that the walls supported a concrete roof, indicate that the walls were reinforced. A complex truss system, radiating from the central column in the apse end supports a 4" cinder concrete roof, reinforced with welded metallic fabric, and clad with slate shingles specified at 12" x 24", California Brilliant Black Roofing Slate; all flashings were copper. Slate shingles of the same size, but green in color, clad the pediment in the gabled end. All openings for exterior doors and windows were the same size and shape. Doors made of the "best kiln dried redwood stock panel" hung in both interior and exterior doorways. Windows, double-hung with sugar pine sashes operated by Queen overhead pulleys and transom sashes above, designed to match the windows in the existing power house, were placed at even intervals around the building. Crystal Sheet Glass, free of all flaws was glazed at the building site after framing the sashes. Architectural ornamentation and hardware, also designed to match the existing building, included mouldings, cornices, and gutters.[6]

Interior walls of the new building were plastered with cement gunite and troweled to a smooth surface. The circular room housing the motors on the east end of the building was separated from the transformer room with a reinforced concrete partition wall topped with a concrete crown molding. The track for a travelling crane ran along the top of the partition wall. Flooring in the transformer room was constructed of concrete, 6" thick. Throughout the building, floors

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[3] Spring Valley Water Company was a private water company that supplied water to San Francisco.

[4] Holmes, *Specifications*, 14-19; Howard C. Holmes, *Concrete Graving Dock for Union Iron Works Drydock Co., General Plan of Pump and Transformer House,* February 1916, Hunters Point Naval Shipyard (Building 383); *Estimate for Special Allotment, Dry Dock 3, Replacement of Sump Drainage Pumps,* January 27, 1959, Ships and Facilities, Navy, Hunters Point Naval Shipyard (Building 383); Byron Jackson Iron Works, Inc., *48" Vertical Pumps, Foundation Plan*, August 11, 1916, Hunters Point Naval Shipyard (Building 383); Byron Jackson Iron Works, Inc., *15" Vertical Pumps, Foundation Plan*, September 16, 1916, Hunters Point Naval Shipyard (Building 383).

[5] Holmes, *Specifications,* 20.

[6] Holmes, *Specifications,* 19-22.

were covered with 1" hexagonal white ceramic tile with a 6" black border of hexagonal tiles. Plans included a lavatory on the north side of the transformer house, just outside the motor room with one toilet, and one wash basin connected to the discharge tunnel with iron stove pipe sewer.[7]

Once completed in 1918, Bethlehem Shipbuilding operated Building 140 as the pump house for Drydock 3 in their commercial ship-repair operation. In the late 1930s, the Navy took interest in acquiring Hunters Point in response to war in Europe and the Pacific. A congressional act in 1939 allowed Bethlehem Shipbuilding to sell Hunters Point to the Navy and in December 1941, after the attack on Pearl Harbor, the Navy moved onto the site. Although operating successfully since 1903 and 1918, the drydocks and pumping houses needed modernizing and rehabilitation to accommodate the Navy's wartime needs. The Navy did not make any significant alterations to the structure or operation of Building 140, however they did perform routine maintenance. In 1951-1952 all of the motors driving the pumps in the building required rewinding because of deteriorated insulation.[8]

After World War II the Hunters Point facility continued to serve as a docking area for Navy ships for repair, overhaul, maintenance and conversion. In 1974, the Navy deactivated the shipyard and leased the facility to private industry; however, the Navy continued to station several of its ships at Hunters Point. In 1991, the Base Realignment and Closure (BRAC) Commission identified Hunters Point for closure. Over the next decade, the Navy and City and County of San Francisco negotiated terms for the lease and subsequent transfer of the facility.[9]

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[7] Holmes, *Specifications*, 19-22.

[8] "History of Bethlehem's San Francisco Yard, 1849-1949," *Pacific Marine Review* (October 1949), 27-34, 88; *Drydock No. 3, General*, Department of the Navy, Bureau of Yards & Docks, San Francisco, P.W. Drawing No. 116794, April 7, 1954.

[9] JRP Historical Consulting Services, *Historic Context and Inventory and Evaluation of Buildings and Structures, Hunters Point Shipyard, San Francisco*, September 1997, 27-28; "San Francisco Naval Shipyard in Permanent Status," *Pacific Marine Review* (June 1947), 63-65, 120; Bonnie L. Bamburg, *Historical Overview of Hunters Point Annex Treasure Island Naval Base and Descriptions of Properties that Appear Eligible for Listing in the National Register of Historic Places*, Submitted to Western Division, Naval Facilities, Engineering Division, 1988, 44-45; Steven R. Black, Mare Island Naval Shipyard, Historic American Engineering Record for Hunters Point Naval Shipyard, Drydock No. 4, HAER No. CA-181-A, (April 1994) 11-12.

Sources:

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Bethlehem Shipbuilding. Photograph. "Hunters Point Shipyard, San Francisco, ca. 1928 Freighter Lansing Gangway from which a Man Fell." San Francisco Maritime National Historical Park. Photo P82-125a.1316psl.

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_____. "15" Vertical Pumps, Foundation Plan." September 16, 1916, Hunters Point Naval Shipyard (Building 383).

Holmes, Howard C. "Plan Showing Location of Old and New Dry Docks at Hunters Point San Francisco Cal,Property of San Francisco Dry Dock Co, 1903." Water Resources Center Archives, Berkeley, Charles Derleth Papers, Box 18, Folder 96.

_____. "Specifications for a Concrete Graving Dock for the Union Iron Works, Hunters Point, San Francisco, 1916." Bancroft Library, University of California, Berkeley, Berkeley. M.M. O'Shaughnessy Papers, Subseries 1.3, Carton 10, Folder 22.

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Journal of the Society of Naval Engineers
"New Dry Dock for San Francisco," XXVII (1915): 235-240.

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Pacific Marine Review
"San Francisco Naval Shipyard in Permanent Status," (June 1947): 63-65.
"History of Bethlehem's San Francisco Yard, 1849-1949," (October 1949), 27-34, 88.

San Francisco Call

San Francisco Chronicle

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Union Iron Works Company. Drawing. "Arrangement of Switchboard, [sic.], Switches,Transformers, Etc., Hunters Point Pumping Station." San Francisco, n.d. Hunters Point Naval Shipyard (Building 383).

U.S. Department of the Navy, Bureau of Yards & Docks. "Drydock No. 3, General." P.W. Drawing No. 116794, San Francisco, April 7, 1954. BRAC PMO West Caretaker Site Office, Yerba Buena Island.U.S. Naval Drydocks, Hunters Point.

_____. "Pump House – Bldg. 140, General Arrangement." P.W.Drawing No. 115792. San Francisco, November 1945. BRAC PMO West Caretaker Site Office, Yerba Buena Island.

Historians: Heather Norby and Toni Webb
JRP Historical Consulting, LLC
1490 Drew Avenue, Suite 110
Davis, CA 95618
530-757-2521
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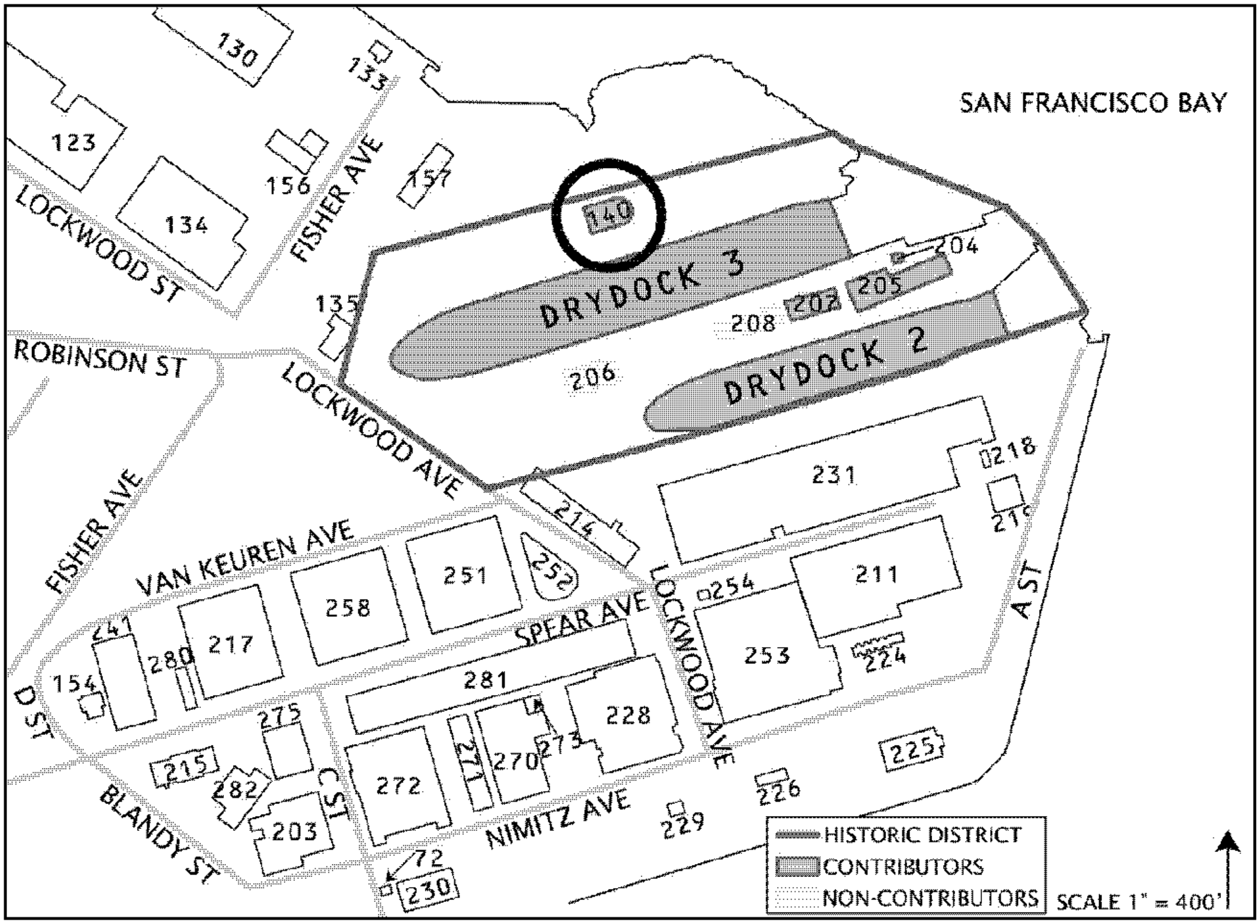
Project Information: This project was undertaken to fulfill the requirements of the *Memorandum of Agreement Among The United States Navy, The Advisory Council for Historic Preservation and The California State Historic Preservation Officer Regarding the Interim Leasing and Disposal of Historic Properties on the Former Hunters Point Naval Shipyard, San Francisco, California.* Heather Norby and Toni Webb of JRP Historical Consulting, LLC (JRP) prepared this document for the Navy. Both Ms. Norby and Ms. Webb conducted fieldwork, contributed to architectural descriptions and the historic context. JRP conducted research at the California State Library, Hunters Point Naval Shipyard (Building 383), National Archives and Records Administration (San Bruno), San Francisco Public Library, San Francisco Maritime National Historical Park Library, and the BRAC PMO West Caretaker Site Office on Treasure Island. William B. Dewey produced the photography.

SITE MAP: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SCALE 1" = 400'